

Spring Lubrication*

METAL COVERED SPRINGS OFFER OPPORTUNITIES
FOR EASIER RIDING CARS
PROPER SERVICING OF PRIME IMPORTANCE

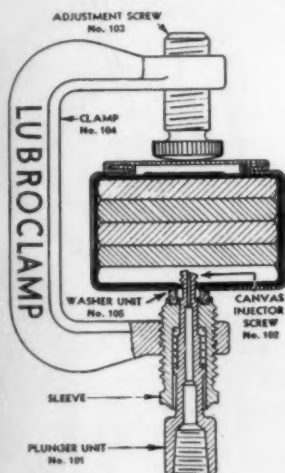
By C. B. EISENHAUER

Engineer, Metal Spring Cover Division, F. L. Jacobs Co., Detroit, Mich.

Car owners today are becoming more critical of the riding qualities of their automobiles than ever before. They are insistent on the elimination of *hard, uncomfortable riding and noisy springs.*

Metal covered chassis springs, properly serviced with the correct type of lubricant or compound, give protection from water, dirt and rust; silence squeaks and noises; reduce spring breakage and—most important of all—provide and maintain riding comfort.

This service meets the car owners' demand for maintaining a *new car ride* and offers service stations profit opportunities from an entirely new source.



Cross section of spring and lubricating clamp.

A recent survey conducted by our field men in regard to car owners' complaints on noisy operation or hard ride, revealed that the noises emanating from the rear end of the car were usually traced to the springs, and in most cases, the springs had been serviced. On removing the metal spring covers, however, the springs were found to be dry and rusty. The lubricant or compound apparently had been improperly applied, for it had been forced between the cover and the canvas liners and not between the spring leaves. After the covers were installed on the springs and serviced properly, the sounds were completely eliminated.

There are certain facts that have a tremendous bearing upon the problem of maintaining riding comfort, and in the majority of cases the solution is not one involving the changing of shock absorber adjustments, because we have found that the original setting by factory engineers to control a predetermined spring action is usually right. An unsatisfactory ride is generally the result of an unstable condition within the springs themselves, resulting in either more or less action than desired.

We have found that to obtain good riding qualities, which depend upon the amount of spring action, it is necessary to maintain a stable spring condition—which is *controlled interplate friction.* If this friction is reduced, increasing the action, the

spring becomes too lively and will not be correctly controlled by the shock absorber. This results in excessive throw, rear axle vibration, or chatter. The most frequent cause of too little friction is that oil or other lubricants have been injected into the spring covers or placed between the spring plates. The presence of water between the spring plates is also very detrimental to satisfactory spring action. Any method proposed to maintain a constant friction must eliminate both of these factors. If the friction is increased, reducing the action,

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Push threaded end of plunger into hole, forcing canvas against plate.

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Program—6th Annual Convention *of the* NATIONAL LUBRICATING GREASE INSTITUTE

MORNING SESSION

MONDAY, OCTOBER 3, 1938
REGISTRATION 9:00 TO 10:00 A. M.
OPENING 10:00 A. M.

ADDRESS OF WELCOME
GEORGE W. MILLER, *President*

HOBNOBBING WITH THE MAN ON THE STREET
MR. FRANK W. LOVEJOY, *Socony-Vacuum Oil Company, New York City, N. Y.*

CHEMICAL AND PHYSICAL EVALUATION OF
LUBRICATING GREASES
DR. W. A. GRUSE, *Senior Industrial Fellow—Mellon Institute of Industrial Research, Pittsburgh, Pa.*, and DR. H. A. AMBROSE and MR. W. A. LUTZ of the Gulf Research and Development Company of Pittsburgh, Pa.

RAPID METHODS FOR DETERMINATION OF OIL
IN LUBRICATING GREASES
R. R. MATTHEWS, *Vice President—Battendorf Grease & Oil Corp., Kansas City, Mo.*

LABORATORY METHODS OF EVALUATING GREASES
MR. G. KAUFMAN, *Beacon Research Laboratory, The Texas Company, Beacon, New York*

HYPOID LUBRICATION
MR. W. R. GRISWOLD—*Packard Motor Car Company, Detroit, Mich.*

WHEEL BEARING LUBRICATION FROM THE MANUFACTURERS'
VIEWPOINT
OSCAR MAAG, *Lubrication Engineer—Timken Roller Bearing Company, Canton, Ohio*

WHEEL BEARING LUBRICATION FROM THE SERVICE VIEWPOINT
W. P. EDDY, *Chief Chemist—General Motors Truck & Coach Company, Pontiac, Mich.*

CHASSIS LUBRICATION
DR. W. S. JAMES, *Chief Engineer—The Studebaker Corporation, South Bend, Ind.*

APPLICATION EQUIPMENT FOR AUTOMOTIVE GREASE
* CHARLES FINE, *Sales Manager—Stewart-Warner Corporation, Alemite Division, Chicago, Ill.*

GREASE APPLICATION EQUIPMENT IN THE INDUSTRIAL FIELD
MAX J. HELMES, *Manager Lubricator Division—United American Bosch Corporation, Springfield, Mass.*

STEEL MILL GREASE LUBRICATION
F. L. GRAY, *Testing and Lubrication Engineer—Carnegie-Illinois Steel Corp., Gary, Indiana*

MONDAY EVENING ANNUAL DINNER
TOWER BALL ROOM—7:00 P. M.
(ENTERTAINMENT—NO SPEECHES)

STEVENS HOTEL - CHICAGO, ILL.
OCTOBER 3 - 4, 1938



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GEORGE W. MILLER . . . Editor
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a very rigid ride is experienced at low speeds over rough roads.

Too much friction, usually accompanied by spring squeaks, is caused by dry spring plates which are sometimes scored, galled, or pitted at the bearing points located at the end of the plates. It is, therefore, evident that interplate friction is controlled by the condition of the contact areas of the spring plates.

Therefore, the immediate problem was to

establish a method whereby the unsatisfactory conditions of the contact areas, previously explained, could be entirely eliminated and the predetermined spring action maintained by keeping interplate friction controlled.

We found that this condition could be entirely controlled if a proper material, to act as a *stabilizer and packing*, was used and retained between the contact areas—and a suitable method provided for forcing

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Latest Car Manufacturers' Recommendations*

AMERICAN BANTAM 60 — 1938 — The crankcase capacity now recommended by the manufacturer is 3½ qt. instead of 3 qt.

Starting July 5, a ball bearing type fan is being used in production. The new type fan is packed at assembly, requiring no further lubrication.

The manufacturer no longer recommends a 20,000 mileage interval for brake cable lubrication. "Clean and grease as required" is now specified.

Correct tire size and pressures are:

	Tire Size	Inflation	
		Front	Rear
2 Passenger	5.00-15	16	16
4 Passenger and Commercial	5.00-15	16	20

BUICK—ALL 1936 MODELS—Originally the factory issued instructions to lubricate rear wheel bearings by removing the wheels and cleaning and repacking the bearings. Rear wheels on these models receive lubrication automatically from the differential, and the factory recently advised that experience in the field has proven that no further lubrication is required.

OLDSMOBILE 6 AND 8—1937—The manufacturer has changed the differential recommendation on these models, making the 1938 recommendation retroactive to include 1937. Lubrication with HYPOID Gear Lubricant—SAE 90 for temperatures above —10 deg. F. and SAE 80 below —10 deg. F.—is recommended at 10,000 mile intervals. It is recommended, however, that the lubricant level be inspected every 2,000 miles.

Merchandising Topics

Even if it's hot, plenty hot, as you read this, the time is not so very far away when "Get Your Car Ready for Winter Driving" will be the theme song of the retail petroleum dealer.

It's not a bit too soon to give some serious thought to this Winter products' market.

Of course, it is generally understood that the Fall and Winter market represents the biggest and potentially most profitable market of the entire year.

What products and services are you going

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to push this Fall? Starting at the front end of the car we find that car owners will spend hundreds of thousands of dollars on the cooling system to prepare it for satisfactory cold weather operation.

Products

Anti-freeze Thermostats
Flushing Compound Fan Belts
Rust Inhibitor Radiator Hose
Radiator Shutters

Services

Flushing Testing

Next, let's consider the engine and line up our profitable sales possibilities in terms of products and services.

Products

Winter Engine Oil High Tension Cable
Spark Plugs Oil Filters

Services

Crankcase Flush Air Cleaner Service

Then to the differential and transmission where we find the profitable sale of Winter Gear Lubricants. Of course, the chassis should be completely lubricated, which gives us the opportunity of inspecting:

Tires Windshield Wiper
Battery Cables Arms and Blades
Batteries

and a general "eye-open" going over of the whole car for necessary needs to make Winter driving a pleasure.

Then there are additional items which contribute to a more satisfactory Winter car operation such as:

Heaters Chains Robes Defrosters

Yes, sir—this Fall-Winter market is full of some real profit possibilities and the wise dealer will have his plans made in advance to cash in on it to the greatest possible degree.

That means making sure that proper stocks of Winter products are on hand early. It means starting solicitation ahead of competitors—at the pump island, in the lubrication department, through house-to-

house calls, by telephone and perhaps through the mail.

No car owner can fail to appreciate your thinking of his comfort and economy with regard to cold weather driving—and the fellow who asks for the business first stands a mighty good chance of getting it.

Give the Fall and Winter profit market some thought—NOW.

1939 New Car Models

We are now being asked: "What is going to be new when the 1939 cars are announced?" There are many rumors to the effect that the public will have a real surprise. It appears that bodies will almost universally undergo a complete change in design. The familiar running boards will, it is rumored, be conspicuous by their absence, front ends will be enough different from 1938 models, so that one will find himself looking at the hub caps or name plate in order to identify the car make, and the trend will be toward lower floors and roofs.

There will undoubtedly be more makes equipped with manual remote gear shifting devices, similar in design to that used as standard equipment on 1938 Cadillac models, which means the central gear shift lever is doomed to pass out of the picture. Transmission overdrives will likely be more widely used, perhaps only as optional equipment. The same may be said of automatic transmissions.

Chassis will undoubtedly be changed in a number of cases and coil rear springs, which were standard on 1938 Buick models, may be found on other 1939 models.

The rumors heard earlier in 1938 regarding rear-engine-mounted 1939 models, will likely be postponed for another year. The use of hypoid gears for rear axle differentials will probably be found on more cars than last year, and engines in general will be pepped up by changes in manifolding and improved carburetion.

Car manufacturers naturally must stock their dealers with the new car models in advance of their public release date. In some instances the car dealers were exhibit-

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additional material through the steel covers and canvas liners, to and between those areas.

A change in the riding qualities of the car will indicate when spring conditioning service is necessary. It is impossible to pre-determine when this change will take place, because each car has its individual problems. Therefore, no definite period of time or mileage for repeating the service is recommended. We believe, however, that



Attach grease gun hose to fitting.

to insure continued satisfactory riding qualities, this service should be repeated about every 2,500 miles. Frequent servicing of the springs, with the correct compound, will not change the easy riding qualities of the car.

EDITOR'S NOTE: This article by Mr. Eisenhower should be of great interest to manufacturers of grease. The servicing of metal covered springs represents a very sizable market for grease as it takes from ½ lb. to 1 lb. to properly service one spring or 2 to 4 lbs. per car. It is to be particularly noted that three different types of grease are called for:

1. Graphite Grease. For general use except where some other type is specified.

2. Chassis Lubricant. For Chrysler, Dodge, DeSoto and Plymouth. These springs are special alloy steel which does not perform satisfactorily with graphite grease.
3. Ford Spring Lubricant. Compound of ice machine oil, talc and asbestos recommended for Ford and Lincoln Zephyr springs.

Car manufacturers are not in agreement as to the type of lubricant to be used. We therefore suggest that you follow the recommendations as given on your CHART pages.

Although mileages of 2500, 5000, 6000, etc., are variously recommended by the car manufacturers for spring servicing, as a matter of fact this mileage is affected by two important factors:

1. Rough roads. This condition causes more spring action and uses the lubricant faster.

2. Water. Long drives through rain, mud and snow force a certain amount of water into the springs. High pressure washing does the same.

This story by Mr. Eisenhower brings out very clearly a number of important points



Separate main and second plates with screw driver so lubricant will go between. A C-clamp at the shackle end will force lubricant in the opposite direction.

in servicing metal covered springs. It is to be remembered that some springs used on current models of Cadillac, La Salle and other cars are provided with special self-lubricating liners which *must not* be lubricated. Ford and Lincoln Zephyr springs are serviced through a fitting on the end of the tie bolt, using special lubricant.

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Personals

A New Motor Truck Lubrication Program Ready for Release

A complete motor truck lubrication guide is nearing completion by The Chek-Chart Corporation, 624 S. Michigan Avenue, Chicago. For nearly nine years the CHEK-CHART organization has made available to the oil industry and to the service trade in general, complete and authentic lubrication information on passenger cars. Now the service is being extended to cover over 97% of the trucks on the American market.

The CHEK-CHART Truck Lubrication Guide is in the form of a spiral bound book of 80 pages, made up of complete lubrication diagrams of all the different truck models and truck lubrication instructions. The information includes all lubrication points, the kind or grade of lubricant recommended for each point, proper mileage interval for lubrication, the S. A. E. grades of engine oil and gear lubricant for different temperature conditions, and a host of other valuable data. Individual lubrication diagrams will be available, printed on heavy, durable stock, for individual fleet owner use.

For years the marketing end of the oil industry has experienced a great need for authentic, accurate, and up-to-date information on truck lubrication. These units, large and small, consume a tremendous volume of oils and lubricants each year—and knowing when, where and how to service them properly means that it will be that much easier for you to secure your share.

Latest Car Manufacturers' Recommendations*

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ing 1938 models in advance of the manufacturers' public release date. This led to many requests for detailed information from CHEK-CHART before release was authorized by the car manufacturers. Like any other recognized publication, CHEK-CHART will have to withhold releases on any details relating to any make or model of automobile until the time authorized by the car manufacturer. Their announcement dates must and will be strictly observed.

LUBRICATE FOR SAFETY EVERY 1000 MILES

